Library resource discovery*

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In addition to the continued growth in the availability of the electronic versions of print-based journals and monographs, the 2000s witnessed the emergence of new web-based resources that did not have print counterparts, taking advantage of broader Internet access, increased searchability, and the ability to frequently update resources. The main challenge for health sciences libraries now, as in the print era, is to use their budgets to build the most effective collection of now electronic-based resources to meet their users' needs. This shifting from paper-based to electronic, web-based resources in health sciences libraries is now almost complete. The 2013/14 Association of Academic Health Sciences Libraries (AAHSL) Annual Statistics reported that 94.7% of the total collection development expenditures were spent on electronic resources.

Libraries have been developing their websites to facilitate access to these resources. Health sciences libraries are no longer defined by their physical space (if they still have a physical presence) but by their electronic collections and their web presence. Libraries have now accumulated large collections of digital resources whose very size can be a strong hindrance to users finding quality, actionable evidence and information. The challenge is to facilitate users' ability to efficiently search these large collections to find, or discover, relevant, actionable evidence and information. This process is often simply called "discovery."

Our library provides an example of the challenge of discovery, with access to over 160,000 e-books, about 15,000 of which are health and medically related; over 20,000 current serial titles; and over 60 databases <http://www.atsu.edu/atsmlib>. How can our library users quickly find the answers to the questions they are looking to answer in the myriad of online resources that we subscribe to? How can we build a website that enables users to efficiently access and use the full range of resources that we make available to them? We have spent the last 2 years trying to turn our website from a site that provides access to our resources by topic and A-to-Z listings by format into a discovery-based site integrating resources to provide access built around our users' needs.

This commentary presents what we have learned as a starting point for a larger discussion on how academic health sciences libraries can build stronger discovery systems to improve our users' ability to find quality, actionable evidence and information meeting their specific information needs using our entire collection. We also present the questions that we think serve as starting points to continue this exploration.

In my (Kronenfeld) forty years as a medical librarian, I have become firmly committed to the KISS (keep it simple, stupid) approach to supporting our library's users. But I do not think that our library's users are stupid! Most are very intelligent and good at what they do, but many do not have the time or interest to become skilled searchers of the evidence base that we make available to them. The patron base we serve ranges from people who may be experts in their work but are not experienced searchers to researchers who, in their limited area of expertise, are more advanced than we are in searching the relevant literature.

The emergence of the web in the mid-1990s coincided with the development of the evidence-based medicine (EBM)/evidence-based practice (EBP) approach to the delivery of care. That approach originally focused on access to and use of the primary literature, as that was what was available at the time with the advent of widely available access to PubMed. Since then, EBM/EBP has become accepted by all health care professions [1].

The major challenges to the EBM model of care is the quality of the evidence base, which varies widely by profession [1]; effective access to the relevant evidence base; and clinicians' time and skill in evaluating the literature [2]. In supporting an EBM/EBP model of care, libraries need to support effective and efficient discovery of the most relevant evidence available, including quality secondary sources that are needed to effectively support a point-of-care model of practice [2].

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In 2013, our library initiated a multiyear project to rebuild our website and improve our patrons' ability to locate quality, actionable evidence and information. Our first step was to define the goals for our new discovery system. We identified four goals as essential in planning how to improve our users' ability to effectively and efficiently access and use our collections:

1. Ease of use: Many of our users are from the Google generation and expect to be able to enter a single phrase to perform a search.
2. Precision: A significant number of our users are looking for very specific information and need to perform searches on very precise topics.
3. Increased discovery of our full collection: Many of the search tools that our users have been using, such as PubMed/MEDLINE and ClinicalKey, search only a portion of the evidence and information resources that the library makes available. We wanted our discovery system to access and search as many of our library-based resources as possible in a single search.
4. Access points: After completing the first phase of our project, the development and launch of our research-oriented discovery tool, we added a fourth goal to provide different access points for the our patrons' different types of information needs.

The first phase in developing our discovery system was to develop our discovery research tool, which we saw as the core of the system. We evaluated available discovery tools and chose EBSCO Discovery Service (EDS) because its algorithm seemed to best handle medical terms and concepts and return consistent, quality results, and its advanced search interface intuitively supported Boolean logic for experienced searchers. We also were impressed with the capability of EDS to limit searches by subject with "discipline limiter" filters. Our electronic resources librarian (Bright) worked for several months with the vendor to develop the tool to serve as the focus of our discovery system for research. This included extensive development of widgets that enable our users to extend and replicate their searches with one mouse click in our most heavily used databases as well as to find relevant resources for specific needs, including specialty databases in the areas of dissertations, anatomy, pharmacology, and images.

We also made use of the "discipline limiters" to choose a default medical search that users can easily recognize and change. We designed and coded a search box along with our information technology (IT) and marketing departments for our OneSearch tool as the default, with additional tabs for a clinical, point-of-care search (it can search UpToDate, DynaMed Plus, or First Consult) and a PubMed search. This discovery search box is the central focus of our website. We redesigned our website around this new search box, which we launched in December 2013.

The second phase of our project was to improve the access to or discovery of library resources and services beyond our OneSearch tool and search box. Library staff assessed our library users' needs to access specific types of library digital resources that were not well served by OneSearch discovery. For example, we found that OneSearch did not provide sufficient access to our available multimedia resources for faculty use in their courses or to our extensive selection of student self-assessment and exam-preparation resources. In response, we created LibGuides to facilitate this access, and we reviewed our existing guide pages and upgraded them, placing these guides in an easily accessible menu on our main website. We also added Browzine to assist our faculty and students in browsing and reviewing new issues of journals. We have found the key to this process is to review the resources that we provide and the access that our users have to these resources at the macro level. Then, we make sure the library's website and its components provide effective and efficient discovery of the library's resources to ensure the best discovery points possible.

DISCOVERY AT OTHER LIBRARIES

What is the current state of discovery in health sciences libraries today? In a visual survey of 144 academic AAHSL member library websites, we found 39% of AAHSL member institutions deployed a discovery tool (56 out of 144), although a large majority of these sites did not emphasize this resource. Furthermore, several libraries that were counted as not having discovery tools did have access to discovery tools through affiliation with general academic libraries but did not employ the discovery tool. We believe that many health sciences libraries that have access to these discovery tools are not satisfied with the general discovery tools developed by their affiliated university libraries because they do not answer clinical questions well, and the general usefulness of these general discovery tools in searching health sciences–related content has been questionable at best. In contrast, nearly 50% (67

of 144) of the libraries offered a Google Scholar search link, and almost 100% offered a PubMed search. Several libraries offer "search box combinations" that may include the catalog, the A-to-Z journal and/or e-book lists, Google scholar, or PubMed. Indeed, our institution combines our discovery tool with a separate UpToDate and PubMed search due to the two services' popularity, but we find this approach only a beginning to discovery.

With the breadth and size of electronic collections that health sciences libraries hold today and in the age of Google searches, tools such as the library catalog or listings of databases are inadequate, and discovery tools are needed and wanted by students and faculty to explore and access the information needed for research and learning.

HOW CAN DISCOVERY BE ADVANCED?

Our purpose in writing this commentary is to initiate discussion and research among academic health sciences librarians on how libraries can advance their patrons' discovery of quality, actionable information from our large, digitally based collections. We do not mean simply adding a discovery tool to our websites: we are calling for a full exploration of the concepts of discovery, including:

- further development of the goals for effective discovery presented in this article
- environmental scans to systematically analyze the library's users and their evidence and information needs
- a review of the library's collections and resources and coverage of the information needs identified in the scan
- a review of available evidence and information resources to meet the needs not currently met by the library's resources
- a review and comparison of available discovery tools
- a review of the effectiveness of the library's website in providing discovery of its resources to meet its identified user needs
- development of effective assessment of the use of the library's website and resources

We have also identified several challenges to more effective discovery that need to be explored:

- Develop wider access to vendor metadata and full text: For discovery tools to be more effective, vendors will need to more openly share their metadata and even full text. Librarians will need to push vendors in this direction. In April of 2014, EBSCO issued its "EBSCO Policy for Metadata Sharing & Collaboration with Discovery Service Vendors" [3], wherein they offer access to their metadata and, when contractually allowed, their full-text data to other discovery service vendors. Health sciences libraries need to pressure other vendors to adopt similar policies.
- Work with our discovery tool vendors to improve their tools to more effectively support health libraries and work with them to improve their algorithms for searching and improve the clinical relevance of their results: We spent extensive time with EBSCO in the development of our OneSearch tool, resulting in a stronger search tool.
- Improve academic health sciences libraries' ability to assess the use of resources and their cost effectiveness in serving patrons. "Assessment in Action: Academic Libraries and Student Success" by the Association of College and Research Libraries [4] could serve as a potential model or collaborator in this.

How can this effort at exploring discovery be started? We have several possible ways to begin:

1. Form a joint committee between AAHSL and the American Association of Colleges of Osteopathic Medicine Council of Osteopathic Librarians to lead an exploration of the issues relating to effective discovery presented in this paper.
2. Form an MLA special interest group focused on exploring effective discovery.
3. Encourage academic health sciences libraries to examine and research how to improve discoverability of their collections and to share this with other academic health sciences libraries through meeting presentations and published results.

Those interested in exploring effective discovery in our libraries may email us their contact information, and we will create a discussion list.

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